



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,859	01/23/2004	Tae Heon Lee	AMKOR-053G	8528
7663	7590	11/28/2005	EXAMINER	
STETINA BRUNDA GARRED & BRUCKER 75 ENTERPRISE, SUITE 250 ALISO VIEJO, CA 92656				CAO, PHAT X
ART UNIT		PAPER NUMBER		
				2814

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/763,859	LEE ET AL.	
	Examiner Phat X. Cao	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 19 September 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 12-27 and 32-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 12-27 and 32-35 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. 09/687,585.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

1. The request for the correction of domestic priority as claimed by Applicant filed on 9/16/05 is acknowledged. Therefore, the previous rejection is withdrawn because the present application is entitled to the benefit of the filling date of a parent United States application (09/687,585), which is filed on 10/13/2000. The new ground of rejection is applied as follow.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 12-18, 21-25, 27 and 32-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Bayan et al (US. 6,452,255).

Regarding claims 12, 16, 22 and 32, Bayan (Figs. 6A-6F) discloses a method of fabricating a semiconductor package, comprising the steps of: a) providing a lead frame

which includes: a die paddle 207 having opposed, generally planar top and bottom surfaces; and a plurality of leads 209 which extend at least partially about the die paddle 207 and each have opposed, generally planar upper and lower lead surfaces and an inner lead end; b) etching the lead frame such that each of the leads includes a half etched portion 240 which is formed in the lower lead surface, extends to the inner lead end, and defines a generally planar etched lead surface which is disposed in opposed relation to the upper lead surface and extends in generally co-planar relation to the top surface of the die paddle 207 (see Figs. 6B and 6C); c) attaching a semiconductor chip 220 to the top surface of the die paddle 207; d) electrically connecting the semiconductor chip 220 to at least one of the leads 209 by wire bonding 222; and e) at least partially encapsulating the lead frame 209 and the semiconductor chip 220 with an encapsulation material 225 such that at least a portion of the lower lead surface of each of the leads 209 is exposed in the encapsulation material 225 (see Fig. 6F).

Regarding claims 13-15, 23-25 and 33-35, Bayan further discloses that etching the entirety of the top surface of the die paddle 207 and etching a portion 240 of the lower lead surface of each of the leads 209 simultaneously (see Fig. 6B) in amounts sufficient to cause the lead thickness of each of the leads 209 to exceed the paddle thickness 207 and the top surface of the die paddle 207 to extend in generally co-planar relation to the etched lead surface of each of the leads (see Fig. 6C).

Regarding claims 17-18, Bayan's (Fig. 6F) further discloses that the bottom surface of the die paddle 207 and the lower lead surface of each of the leads 209 are

exposed from the encapsulation material 225 and extend in generally co-planar relation to each other.

Regarding claims 21-27, Bayan (Fig. 6C) further discloses the step of plating the upper lead surface of at least one of the leads 209 with an electrical conductivity enhancing material 216 (column 6, lines 7-9).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 19-20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayan et al in view of Glenn et al (US. 6,281,568).

Regarding claims 19 and 26, Bayan does not disclose the step of plating the bottom surface of the die paddle and the lower lead surface of each of the leads with a corrosion-minimizing material.

However, Glenn (Fig. 1) further teaches the step of plating the bottom surface 24 of the die paddle 22 and the lower lead surface 32 of each of the leads 30 with a corrosion-minimizing material including gold, nickel or palladium (column 7, lines 53-60). Accordingly, it would have been obvious to plate the bottom surface of the die paddle and the bottom surfaces of the leads of Bayan with a corrosion-minimizing material above because such plating metal materials would be compatible with printed circuit boards, as taught by Glenn (column 7, lines 53-60).

Regarding claim 20, Bayan does not disclose the step of exposing a portion of the upper lead surface from the encapsulation material.

However, Glenn (Fig. 6) teaches the step of applying the encapsulation material 55 such that a portion of the upper lead surface of each of the leads 32 is exposed (also see column 10, lines 45-53). Accordingly, it would have been obvious to expose a portion of the upper lead surface of Bayan from the encapsulation material in order to facilitate connection of a solder interconnection to the package, as taught by Glenn (see abstract, second paragraph).

***Response to Arguments***

6. Applicant argues that Bayan does not qualify as prior art because the present application is relied upon the priority date of the foreign priority papers filed on October 15, 1999.

This argument is not persuasive because Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Therefore, Bayan still qualify as prior art under 35 U.S.C. 102(e).

***Conclusion***

7. This action is made non-final because of the new ground of rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phat X. Cao whose telephone number is 571-272-1703. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PC  
November 23, 2005



PHAT X. CAO  
PRIMARY EXAMINER